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1176 Issued August 23, 1909

U. S. DEPARTMENT OF AGRICULTURE.

OFFICE OF EXPERIMENT STATIONS—CIRCULAR 84.

A. C. TRUE, Director.

EDUCATION FOR COUNTRY LIFE

BY

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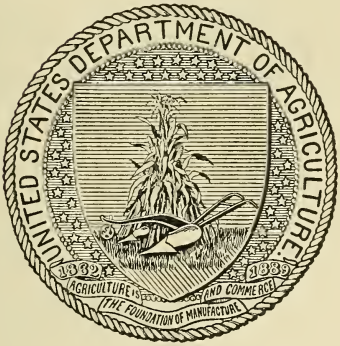
Assistant Secretary of Agriculture.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1909.

LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Office of Experiment Stations,
Washington, D. C., June 12, 1909.

Sir: I have the honor to transmit herewith the manuscript of an address delivered before the Minnesota Education Association by Prof. Willet M. Hays, Assistant Secretary of Agriculture. This is an interesting presentation of the problems of country-life education from the standpoint of an experienced educator who has had a large share in the successful development of a system of agricultural schools for the State of Minnesota. It therefore constitutes an important and timely contribution to the discussion of the methods for improving and extending our educational facilities for people living in the country, and as such may properly be included among the Department's educational publications. I therefore recommend that it be published as a circular of this Office.

Respectfully,

A. C. True,
Director.

Hon. Willet M. Hays,
Acting Secretary of Agriculture.

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EDUCATION FOR COUNTRY LIFE.[a]

INTRODUCTION.

The movement to develop scientific agriculture was seriously entered upon in the year 1862 when Congress passed the organic law of the Department of Agriculture, and also gave to each State an endowment of lands with which to establish a State college of agriculture and mechanic arts. In 1887 Congress provided for each State and Territory an annual appropriation of $15,000 with which to maintain an agricultural experiment station.

Annually for the last twenty years Congress has added larger and larger sums to its grants for agricultural research and education in the above-named institutions, and the State legislatures have contributed, at first in smaller amounts, but later with increasing liberality, to the ever-growing funds devoted to building up a science of agriculture, and to the much greater work of carrying this new knowledge to the people. There has been thus spent something less than $100,000,000 in agricultural research and education, the major part of it during the last twenty years.

There have been two results arising from this movement, which, operating together, make an epoch in country life. The development of a wonderful body of scientific knowledge of farming and farm home making has been well begun; and the organization of methods for conveying this inspiring and effective knowledge to all the people has been well started.

This new movement yearly gains larger recognition from all classes of people and larger financial support from all National and State legislative bodies. It makes easier and pleasanter the work of the farm, builds up a stronger rural civilization, and makes very large additions to the economic wealth of the country.

The indications are that during the next twenty years plans for extending agricultural research and agricultural education must provide for the expenditure of additional tens of millions of dollars of public funds annually. The fact that the net economic result alone may be additional farm products worth hundreds of millions annually is year by year forcing upon those in authority the necessity of expanding our facilities for gaining and diffusing a knowledge of good farming. As business enlargements which give direct returns of ten or twenty to one, or one to two thousand per cent profit, force their way, and agencies which delay them give way, so the movement in agriculture is certain to develop a system of education which practical farmers will approve and demand.

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[a] Address by Willet M. Hays, Assistant Secretary of Agriculture, given with stereopticon views, before the Minnesota Education Association, January 2, 1908.

The National and State departments of agriculture, the State universities and State colleges, the State experiment stations, the agricultural high schools, and the branch experiment stations, with their researches and their extension of instructional demonstration work to thousands of localities, are making a combined effort of stupendous proportions. They are winning the hearts of the American farmers with new interest in farm subjects and are adding efficiency in farm management. The rising question of the hour, therefore, is one of method and direction for this vast movement, with its oncoming tens of millions of increased income. Where and how shall most of the needed money be spent? Manifestly the maximum expenditure needed in agricultural research will earliest be reached, while the much larger expenditure needed for agricultural education will be longer in reaching the point beyond which it will not give the optimum percentage of returns. The thorough organization of research work is assured and its further development is not a matter of such great concern as is the organization of a system of schools, of extension teaching, and of instruction by demonstration.

That part of our educational system which is of collegiate grade is sufficiently well organized to warrant the belief that its development by easy evolutionary steps is assured. The organization of secondary education for country life is fairly well blocked out. The plan of establishing a system of large agricultural high schools is gaining popular favor. There is good reason to expect that we shall have a class of high-grade secondary schools providing vocational finishing courses for those who, expecting to live on farms, will close their school life with from two to four years of vocational high-school work. The wonderful success of the Minnesota, Nebraska, Wisconsin, and other agricultural high schools in receiving, in preparing for country life, and in returning to the farms rural youth of both sexes, and the success of their graduates in becoming better farmers, home makers, and citizens, gives assurance that such schools will receive extensive practical trial and use. That these schools are adapted to fit into our system between the rural school and the agricultural college is an established achievement in States where the effort has been made.

In short, a movement is well begun to organize better, as a part of our great American school system, the secondary schools so as to meet especially the needs of country life. This movement contemplates that, below and leading to our more than 60 State colleges of agriculture already established, we shall have 300 to 400 agricultural finishing schools—practically one in each country Congressional district of ten or more counties, either separate or as a strong department of an existing institution.

But vastly more important is the larger movement to establish a system of consolidated rural and village schools, and of courses in agriculture in town and city schools so near the homes of the farm youth that something of instruction in agriculture, in home economics, and in social and civic affairs, as well as in the accepted subjects of a so-called general education, shall be taught to all the boys and girls of the farm. To meet this first need the consolidated rural school in the open country and the consolidation of rural schools about the villages and cities is rising rapidly into prominence along with the vocational high school; and many city and nonpublic schools of secondary and higher grade are seeking to add agricultural instruction to their courses of study.

Our State normal schools are also rapidly getting ready to join in building up our rural schools along lines of a high order of country-life efficiency. It is conceded that the large and important task of supplying trained teachers for approximately 30,000 consolidated rural schools in our rich rural communities, for thousands of town and city schools, for 100,000 small rural schools in isolated and sparsely settled communities, for 300 or 400 large agricultural high schools, for 150 State normal schools, and for 60 State colleges of agriculture may be taken up in a practical way and solved in one or two decades. The demand and the organization for training teachers going forward together will meet with only the usual pioneering difficulties.

In redirecting our schools the consolidated rural and village schools will entail the largest expense. They will reach nearly all the pupils from country and village while they are living at home. These schools are under the most natural and most plastic conditions of all our schools. And since Minnesota seems already in a mood to extend its splendid system of large agricultural high schools, and is most favorably situated financially to reorganize its rural schools by consolidating them and to pay the necessary increased cost, I shall, in this address, give especial attention to the consolidated rural school.

During the nineteenth century the one-room district school was adopted by the rural sections of all the States. Its simple organization, its proximity to the country homes, its emphasis on the three R's, its inexpensiveness in its simpler forms, its strict provincialism, its local government, the close personal work of teacher with pupils, and its wonderful results in elementary education have given it an historical position of great strength. With the rural home and the country church it has stood as a strong institution in our country life. It has greatly aided in developing the family farm, that most American of all our institutions. It has been a large element in a country-life organization in which the best product of our family-owned lands has been boys and girls. The little red, or white, or tan-colored school houses have a large place in the hearts of our farmers and farmers' wives, and in the hearts of many who have moved from the country to the city. No tongue nor pen should malign it or discredit its mighty work. It has had and still has a National and racial value far beyond its usual share of recognition. It has been one of the large elements of true Americanism. It will always remain in probably one-third of our territory, and it should there be better developed to meet the demands imposed by modern conditions.

But in a world of changes the time came when new conditions were encountered, new functions were to be performed by our rural schools, new things were necessary in country-life education, as in city-life education. The nonagricultural pursuits, with larger salaries than these small school units could offer their teachers, enticed to other vocations the vigorous young men teachers, who were the great strength of the district school in the first half of the nineteenth century. Young women, too often with the city point of view, and unable to take up the new things in agricultural life, are in most cases the teachers. The small unit makes impossible salaries large enough to hold young men from more profitable agricultural and nonagricultural vocations. It makes impossible a division of labor in school work, thus burdening the teacher with so many daily recitations that he can not succeed with classes in needed industrial subjects. While in the city the efforts have been in the direction of fine, highly equipped buildings, libraries, and apparatus for instruction in science and, in some cases, in the mechanic arts and home economics, the efforts of the rural districts have been directed toward increasing the number of schoolhouses at the expense of the size of the district and the quality of the school buildings and equipment, until the contrast between city and rural education has become painful. The time for an inward struggle to throw aside the old, though it be one of our dearest institutions, has come, and one community after another is responding to the spirit of the times.

All who have a clear knowledge of the facts regarding rural-school consolidation realize that a large percentage of our rural schools are to be consolidated into larger units, at once providing better conditions for instruction in the general studies and making it possible to add much that relates to the vocations of farming and home making. *In the United States there have been six hundred successful experiments at complete consolidation of rural schools, and practically no failures.* (See figs. 1, 2, 3, 6, 8, 9, 10, 11, 12, 13.)

Speaking in round numbers, we have 300,000 little rural schools in America, 200,000 of which are in neighborhoods with productive soils and could be united into 30,000 consolidated rural schools. Owing to difficulties of consolidation in probably one-third of our rural area, we shall have remaining about 100,000 little rural schools, or one-third of the whole, in communities too isolated or too sparsely settled for practicable consolidation.

The one-room or "district" schools in localities too isolated for consolidation deserve a new setting and a new picture. America's interest in those small district schools, which are in sections where consolidation is not practicable, will not lessen. As the country-life educational machinery is organized in consolidated rural and village schools and in agricultural secondary schools, with more specific coöperation from our normal schools and from agricultural colleges and departments of agriculture, the little rural school can find teachers, for at least a part of the time, who will know how to teach something of farming and the farm home, as well as be better prepared to instruct in the general school subjects.

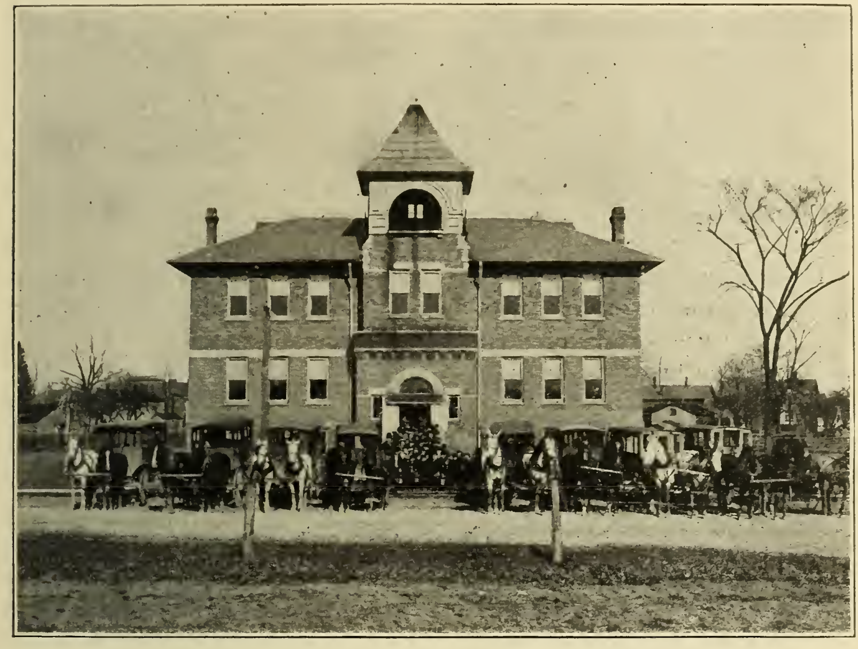

FIG. 1.—Consolidated farm school. School wagons ready to take the children home. There are needed 30,000 consolidated rural schools of this type in the open country in the United States.

The school garden and other available equipment for teaching agriculture and home making will always be but partially developed in the one-room rural school. But with teachers who are trained to teach the subjects, valuable lessons can be given in relation to both the mode of country life and rural business affairs, and the pupils can be so interested and benefited that they will attend more regularly and through a greater number of years than now, thus securing, in addition to agriculture, much more of general school culture. Moreover, pupils in these districts will be led to attend schools in some distant consolidated school district or in a village where agriculture and home economics are taught. The upward development in country life education will carry these small schools with it. In them must be done probably 20 per cent of the work of vocational country life education. The little schoolhouses and their grounds, under the progressive impulse of the times, are destined also to become bowers of beauty, places where millions of boys and girls of the farm are to be taught how better to serve themselves and the State. The desolate rural school standing on the bleak plain is too un-American to endure the changes of the times. It must be transformed into a part of our beautiful outdoors, and it must be made more efficient in general studies, in culture, and in vocational training for country life.

During the nineteenth century agricultural societies were formed in great numbers and with a large total membership. State and National societies devoted to agriculture, horticulture, forestry, dairying, the breeding of animals and plants, and reclamation were also formed. For the most part they worked independently, though at times they have united in some movement of common interest. Very many of the suggestions of these organizations have been enacted into State or National law. Under their patronage National and State executive departments of agriculture and agricultural research institutions were organized, and at the close of the century they had so won their places that they were growing rapidly. Much was done in creating a technical literature in agriculture, and bulletins and agricultural periodicals came into very wide use. Research institutions developed a most valuable body of knowledge concerning the management of the farm and the farm home, and not a little was done in reducing this information to pedagogical form. The laboratory method of instruction, teaching by means of chart and platform demonstration, practice laboratories, workshops, creameries, demonstration fields, and apprenticeship instruction, all had been more or less developed by the teachers, but the State colleges of agriculture were wholly lacking in numerical capacity. At the end of the century they were not accommodating one-fifth of 1 per cent of the farm boys and girls who were preparing to enter the vocations of farming and farm-home making. During this same period schools of law, medicine, engineering, and other technical schools had developed sufficient capacity to supply nearly all the technicians needed in these lines. The agricultural colleges developed a kind of needed education which they themselves could give to only a very few of the millions needing training for life.

The new century found a growing body of new knowledge related to the farm and to other vocations. This knowledge is gradually yielding to organization in text-books, in laboratory manuals, and in practice work in the fields, the orchard, the garden and forest, the barn and dairy, and the home. There is promise that the tens of millions already expended by the enterprising nations of the earth in agricultural research are to be rapidly multiplied to hundreds of millions of expenditure. That the immense body of new knowledge thus secured will command a prominent place in the training of our farm youth is no longer in doubt. When ten times as much technical research has been completed as now, and this new knowledge has been put into teachable form, the demand that it be carried to all the ten million youths who are preparing for country life in the United States will be irresistible. And this knowledge will so increase the general and economic efficiency of our country-life schools that the half of the rural children, approximately 5,000,000, now annually induced to attend school, will be increased to six or seven million. The increase of technical knowledge through research and the development of artisan skill as a result of invention, division of labor, and accelerated competition, must give to school education a new relationship, a new field, and new duties.

The schools must bend their energies more clearly to training for all the specific vocations. A few will perceive the advantage and meet the requirements of this new development unaided; all must have the opportunity to do so. Our industries have reached the time of close specialization, and our schools must follow. They should lead. In our great manufacturing industries the need of trained artisans and the wisdom of giving to our American youth the opportunities of the higher paid technical trades, instead of reserving this work for foreigners trained in schools abroad, are leading to the establishment of trade schools, often with funds supplied by employers.

It is manifest that agricultural knowledge can not reach the great body of rural pupils except through their local schools. Fortunately experiments with methods of bringing this new knowledge in simple but effective form to our youth during their school age have been in progress along numerous lines. These experiments have resulted in finding methods which give positive results of great value.

The district school, which has so grandly fostered the spirit of world-wide republicanism, is giving birth to the consolidated rural school. This new school will retain all the ideals and strength of the original district school and will add efficiency along many lines.

In the meantime the agricultural college has given birth to the agricultural high school, adapted to carrying the most practical forms of training down to many of the great majority who in the nature of things are not to go to the college. And the mechanic arts college, likewise, has given birth to secondary schools of mechanic arts, trades, and industries, while home economics promises to go into almost all secondary schools. In fact, the tendency is to develop high-school work in all rural village and city communities which can afford it, and to place at least such beginnings of instruction in home economics, mechanic arts, and agriculture in each as is practical and warranted by the needs and means of the respective communities. For that part of the vocational instruction which is most technical, and for which groups of special teachers and industrial equipments are required—in other words, for the finishing courses—separate large schools are required. That those schools for the manual industries can be of collegiate grade and hope to reach large numbers no one can contend. And the impossibility of teaching well all needed industrial subjects in every rural or village community school no one will venture to controvert. The standards set by existing large agricultural high schools and by large secondary schools devoted to the nonagricultural industries illustrate the fact to all who investigate that these large, highly equipped institutions have the same relations to the manual industries as do the technical colleges to the professions. That American agriculture and American manufacture need finishing courses both in local schools and in large highly equipped schools of lower than collegiate grade to make our productive classes on the farm and in the shop more efficient is patent to all who know our manual industries and have given this matter constructive thought.

The articulation into a unified American school system of all the courses of study in our primary, secondary, and collegiate schools, technical as well as general, is both important and practical. It should provide ladders by means of which all those needed in technical professions, including agriculture and home economics, will climb up to the collegiate and graduate courses and thence into leadership in the respective lines needing technicians.

But of vastly greater importance than their articulation with higher schools is the articulation of the rural school and the secondary agricultural school with the farm and the farm home. Bringing the results of research in agriculture and home making into our school courses attended by farm pupils cements together forever the school and the family farm, each of which is to be, more than ever before, a potent factor in our National life. The teacher of the consolidated rural and village schools and the parents on the farm can cooperate in child development as in no other community in the world. Here the pupil can best combine physical growth, book learning, and economic training with manly and womanly social and moral development. Since the consolidated rural and village school must be depended upon to provide the larger part of the education of those who are to farm and make farm homes, its paramount importance is manifest.

The National and State departments of agriculture; the State colleges of agriculture; the State normal schools, equipped to prepare teachers in agriculture and home economics; and the agricultural high schools, designed to prepare for college or normal school and to graduate students to return to leadership in farm and home management in the rural districts, can perform their largest functions only through the consolidated rural and village school. Here only can the whole of farm youth be reached during their receptive school age, when time can be afforded to learn the principles, facts, and methods of scientific agriculture and scientific and artistic home making and the best in country living. Here can the public teacher and the parent best cooperate in uniting school training with farm and home training. During this impressionable age can farm life be best learned, and the basis laid for that intelligence which will result in that general rural cooperation which is needed.

The higher secondary agricultural schools, as one in each Congressional district, devoted to country life, will need no other reasons for their cost than that they help our State agricultural colleges and normal schools to prepare teachers for approximately 30,000 American consolidated rural schools in which agriculture may be taught. They will, however, greatly increase the efficiency of approximately 100,000 district rural schools remaining in isolated and sparsely settled communities into which many of their graduates will go as teachers, and supply hundreds of trained men and women to the farm and farm homes.

ARTICULATED ORGANIZATION OF SCHOOLS FOR COUNTRY LIFE.

While the prominent consideration is that the district rural schools, the consolidated rural schools, the village schools with agricultural courses, and the agricultural high schools shall articulate with the farm and the farm home, there is much advantage and little disadvantage in having the course of study in elementary, secondary, and collegiate schools relating to country life articulated into a unified whole.

It has been demonstrated that this can be done without so seriously disconnecting these courses of study from the courses in schools of the cities as to prevent pupils from readily transferring from one to the other. Naturally the divergence increases year by year after the elementary eight-year course is completed, but not more than the divergence among school courses in the schools in the city. Furthermore, all schools are becoming more liberal as to accepting credits in studies which combine vocational and general training as equivalents in lieu of credits in studies which have only general training value, so that the agricultural high school course is making its way rapidly as a general secondary course. It is not so different as generally regarded from other secondary courses, most of which need to be modified in the later years, or supplemented, to give preparation for technical collegiate courses other than the one toward which they specifically lead: as the literary courses, scientific courses, and engineering courses, respectively.

The general collegiate course so much insisted upon a few decades ago has, numerically speaking, lost its prominence, and collegiate courses leading directly, or through a graduate course, to a vocation for which they specifically prepare are now wisely accommodating most collegiate students; and the same tendency in secondary school courses appears in large schools in response to the rising demand for training which both educates and fits for a definite calling. The one is collegiate in grade, the other secondary.

The facts that all subjects serve to develop mental power and that studies which prepare pupils for a vocation are not therefore less cultural are being accepted by educators, and have been accepted by men of affairs for some time. The broadest pedagogical philosophy is now centering about the proposition that every boy and every girl should be provided with a closing vocational course in the last part of the school work, whether that be in the last years of a primary school, in a secondary school, in a collegiate school, or in a school for college graduates. This philosophy is broadening the old dictum—first give a man a collegiate course and then train him as a specialist. A democracy must give not alone college graduates but all classes a chance to be trained for specific service, as well as for clear general thought.

The vocational subjects are being woven into the curriculum from the earliest years, coordinating the child's life on the farm, in the home, and among folks with his school work. By touching more interests, by experiencing more activities, by building more day dreams with clearer facts and more real experience in the background, the student more completely measures the forces and tendencies and tastes within himself. He is better self-taught about himself and can more wisely choose a vocation.

The scheme of courses of study for the consolidated rural school, the agricultural high school, the agricultural college, and the graduate courses presented below is adapted, with some changes, from a report of the committee of the National Education Association on "Industrial Education in Schools for Rural Communities," published in 1905. It is designed as a basis to be used by schools of the respective classes acting separately or cooperatively in devising courses of study which will especially meet the conditions of the pupils, the teaching force, and the school equipment, and as a guide to a State or county in devising a system of education for those who live on farms and who are nearly all to remain in country life. Its point of view, being that of the consolidated rural school in the open country, of the large agricultural high school—as one in each ten counties—and of the State agricultural college, may to some people seem wrong from the standpoint of the village or city school. Where farm youth attend village or city schools with other youth, and means will allow, more or less of the technical studies here listed may be placed in the regular course or be offered as elective courses. Students who secure a portion of the studies in the local schools can of course take advanced standing upon entering the large agricultural high school. Students who secure all their required general high-school studies in the local schools are able to take the technical subjects with a residence of only one or two years at the agricultural high school.

ARTICULATION OF SCHOOL COURSES.

[Course in the Consolidated Rural School, in the Agricultural High School, and in the Agricultural College, in a unified scheme.]

IN THE CONSOLIDATED RURAL SCHOOL.[a]

Eight-year Elementary School Course.

FIRST YEAR.

- Reading.
- Spelling.
- Language.
- Arithmetic.
- Writing.
- Singing.
- Nature study.

SECOND YEAR.

- Reading: using in part themes from nature, the farm, and the home.
- Spelling.
- Language.
- Arithmetic.
- Writing.
- Singing.
- Physiology and hygiene.
- History.
- Drawing.
- Nature study.

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[a] The one or two room district school can provide such parts of the vocational studies as the teachers, the equipment, the time, and other limiting conditions allow. Some pupils in districts not consolidated can attend school in near-by consolidated districts. Those desiring to work their way through the last part of the elementary and two years of high school course in the consolidated rural and village school can find opportunities to work for board and clothes on farms in consolidated rural school districts. Thus many country, village, and city boys will be able, under the most educative conditions, to relieve their parents of the main expense of their education and, by helping the farmer or the farmer's wife, help solve the farm labor problem. The youth from the iso-

THIRD YEAR.

Reading: nature stories forming a part.
Spelling.
Language.
Arithmetic.
Writing.
Singing.
Geography.
Physiology and hygiene.
History.
Drawing.
Nature study.

FOURTH YEAR.

Reading: country life literature included.
Spelling.
Language.
Arithmetic.
Writing.
Singing.
Geography: should include the distribution of farm products.
Physiology and hygiene.
History.
Drawing.
Nature study.

FIFTH YEAR.

Reading: including stories of our country and lessons in agriculture and home economics.
Spelling.
Language.
Arithmetic.
Writing.
Drawing.
Geography: including in part physical geography in respect to the work done by nature's forces in preparing soils.
History.
Physiology and hygiene.
Nature study.
Literary society work.

SIXTH YEAR.

Reading: lessons should include animal life and adventure.
Spelling.
Language.
Arithmetic.
Writing.
Drawing.
Geography.
History.
Physiology: including principles of nutrition and food values.
Agriculture: first half-year, the affairs of agriculture; second half-year, the soil.
Woodwork for boys.
Sewing for girls.
Literary society work.

SEVENTH YEAR.

Literature.
Spelling.
Grammar.
Arithmetic.
Writing and drawing.
Geography: physical geography.
History.
Cooperative enterprises in agriculture: farming schemes and crops.
The farmstead and home.
Singing.
Literary society work.

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lated mountain home, from the widely separated ranch home of arid districts, or from other localities where only small and inefficient rural schools can be afforded, can thus work on the farms or in the farm homes near consolidated rural schools and there learn the industry and secure the school advantages of the highly developed farm community. This will often lead to the surplus of increased population of the less productive rural districts becoming attached to life on the richer lands where the consolidated rural school thrives. Some will return as leading farmers and home makers and as teachers in the isolated rural schools, thus bringing the general culture and the vocational training of the consolidated rural school districts to the isolated communities.

EIGHTH YEAR.

Literature.
Orthography.
Grammar.
Arithmetic; including farm problems, land surveying, and agricultural statistics.
Writing.
Drawing.
Constitution of United States and States.
History.
Agriculture; animal practice work for boys.
Home economics; practice work for girls.
Literary society work.

Nature studies, agriculture, and home economics, requiring laboratory and outdoor work, should be planned for each year so as not to have classes conflict in the use of the school laboratory room or of other facilities.

FIRST TWO YEARS OF FOUR-YEAR AGRICULTURAL HIGH SCHOOL OR SECONDARY COURSE.

Ninth and tenth years are usually in the consolidated rural school, and eleventh and twelfth years in the district agricultural high school. Agricultural high school students, whether in the consolidated rural school or in the agricultural high school, are usually in school six months and six months in apprenticeship on the farm or in the home.

NINTH YEAR—FIRST HALF YEAR.

Agricultural botany	4
Elementary algebra	5
English	4
Drawing—farms and buildings	2
Rhetoricals	1

Boys:

Study of breeds	2
Rural engineering	3
Practicums [a]	2

Girls:

Sewing [a]	2
Agriculture	1
Practicums [a]	2

SECOND HALF YEAR.

Agricultural botany	4
Elementary algebra	5
English	4
Farm accounts	4
Rhetoricals	1

Boys:

Fences and farm conveniences [a]	2
Practicums [a]	2

Girls:

Cooking [a]	2
Practicums [a]	2

TENTH YEAR—FIRST HALF YEAR.

Plane geometry	5
Foods and feeds	4
Civics	4
General history	5
Rhetoricals	1

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[a] Practice in laboratory, shop, dairy barn, or field. Usually two hours here, without preparatory study at the student's room, are equivalent in these subjects to one hour in class and one hour of study.

Boys:		Girls:	
Judging stock and seeds[a]	1	Sewing[a]	2
Carpentry[a]	2½	Practicums[a]	2
Practicums[a]	2		

SECOND HALF YEAR.

Plane geometry	5
English	4
Agricultural mathematics	4
General history	5
Rhetoricals	1
Vegetable gardening	2

Boys:		Girls:	
Breeding plants and animals	1	Sewing[a]	2
Carpentry[a]	2	Practicums[a]	2
Practicums[a]	2		

IN AGRICULTURAL HIGH SCHOOL.

Junior and senior high school work in large agricultural high school. First and second high school years also in these schools for students coming from one-room school districts.

Last Two Years of Four-year Agricultural High School or Secondary Course.

ELEVENTH YEAR—FIRST HALF YEAR.

Fruit growing	3
Higher algebra or comparative physiology	5
Agricultural physics	4
Drawing, farms and buildings[a]	2
Music	2
Poultry	2
Dairy husbandry	2
Vegetable gardening	1

Boys:		Girls:	
Carpentry[a]	2	Cooking[a]	2
Military drill	2	Social culture	1
Gymnasium[a]	1	Laundering[a]	2
		Physical training	2

SECOND HALF YEAR.

Solid geometry	5
Elementary chemistry	5
Agricultural physics	5
Dairy husbandry	2
Music	2

Boys:		Girls:	
Handling grain and machinery[a]	1	Home management	1
Drawing barns[a]	2	Drawing farm houses[a]	1
Judging live stock	2	Sewing[a]	2
Military drill	2	Physical training	2
Gymnasium	1	Field agriculture	1

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[a] Practice in laboratory, shop, dairy barn, or field. Usually two hours here, without preparatory study at the student's room, are equivalent in these subjects to one hour in class and one hour of study.

TWELFTH YEAR—FIRST HALF YEAR.

Chemistry of plants and animals	5
Forestry	3
Entomology and zoology	5
Dairy chemistry	2

Boys:		Girls:	
Breeding animals	2	Cooking [a]	2
Veterinary	2½	Household art	1
Blacksmithing [a]	2½	Sewing [a]	2
Military drill	2	Physical training	2
Gymnasium	1		

SECOND HALF YEAR.

Plant propagation	3
Farm management	2

Boys:		Girls:	
Breeding plants	1	Meats	1
Field crops	2	Domestic chemistry	3
Dressing and curing meats	1	Pedagogy	4
Feeding animals	3	Cooking	3
Soils and fertilizers	5	Sewing	3
Veterinary science	2½	Home economy	1
Blacksmithing [a]	2½	Dietary studies	3
Military drill	2	Domestic hygiene	1

THE COLLEGE OF AGRICULTURE.

The outline below provides for electives, thus enabling the large agricultural college to offer many courses that the student may elect for some definite practical agricultural vocation or for some line of technical work related to agriculture or home economics. Students desiring to enter the many vocations to which the college of agriculture leads should have wide opportunities, under the advice of teachers, to elect those studies bearing on the proposed life work. And as rapidly as practicable our larger colleges of agriculture are organizing distinctive courses, as in agronomy, live stock, dairying, horticulture, forestry, and home economics.

Four-year Collegiate Agricultural Course.

FRESHMAN YEAR.

A. Required for graduates of approved agricultural high schools:

First semester:		Second semester:	
Mathematics	4	Mathematics	4
Drawing	4	Chemistry	2
Geology	3	Drawing	3
Botany or zoology	4	German, French, or Spanish	4
German, French, or Spanish	4	Botany or zoology	4
Rhetoric	3	Rhetoric	3
Military drill or gymnasium	2	Military drill or gymnasium	2
		English literature	2

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[a] Practice in laboratory, shop, dairy barn, or field. Usually two hours here, without preparatory study at the student's room, are equivalent in these subjects to one hour in class and one hour of study.

NOTE.—A modern language elected by students in classes A and B must be pursued for two full years.

B. Persons who have graduated from approved general or mechanic arts high schools, or have an equivalent training, take in lieu of the above freshman course a full year of approved work in agriculture or in home economics in an approved agricultural or home economic secondary school, choosing subjects from the agricultural high school course, as given in the ninth, tenth, eleventh, and twelfth years above.

SOPHOMORE YEAR.

First semester:		Second semester:	
Rhetoric	3	Geology	3
Botany or zoology	3	Botany or zoology	3
Agricultural chemistry	4	Agricultural chemistry	4
German, French, or Spanish	3	German, French, or Spanish	3
Agricultural physics	2	Agricultural physics	2
Military drill or gymnasium	2	Rhetoric	1
Animal husbandry practicum	4	Military drill or gymnasium	1
		Animal husbandry practicum	3

JUNIOR YEAR.

First semester:		Second semester:	
English	3	Agricultural economics	3
Elective, academic	3	Elective, academic	3
Elective, academic	3	Elective, academic	3
Elective, technic, major	4	Elective, technic, major	4
Elective, technic, minor	4	Elective, technic, minor	4

SENIOR YEAR.

First semester:		Second semester:	
Elective, academic	3	Elective, academic	3
Elective, academic	3	Elective, academic	3
Elective, academic	3	Elective, academic	3
Elective, technic, major	4	Elective, technic, major	4
Elective, technic, minor	4	Elective, technic, minor	4

NOTE.—The figures indicate the number of weekly recitations of the respective studies. Minor agricultural subjects cover not more than two semesters' work in the junior and senior years. Major agricultural subjects, including a graduating thesis and a year of practical work, are to be carried through the junior and senior years.

The elective academic subjects are to be chosen from among the subjects offered in the academic departments of the college or university, and the technical subjects from among those offered by the divisions of the agricultural faculty.

The above courses are not offered so much as models to be followed as to show that the three courses may be articulated in a manner at once feasible to teach and most effective in the broad as well as the technical educational result.

The plan contemplates eventually for each State:

(1) A system of well-equipped consolidated rural schools; agriculture in village and city schools for such youth from farm or town as

may there choose to start upon a study of this subject; and agriculture in such isolated rural schools as it is not practicable to consolidate.

(2) A system of State agricultural high schools, each with a large farm, ample buildings, a score or more of teachers, and suitable equipment for teaching agriculture and home economics. (Fig. 4.)

(3) A well-organized State agricultural college.

(4) Graduate courses.

(5) A comprehensive experiment station organization, with branch stations and room on consolidated rural school farms for demonstrations, variety testing, and similar work.

Very little has been introduced into this suggested scheme of articulated courses of study which is either new in plan or untried, or concerning the success of which there is any serious question. In most cases the whole plan can not be at once installed, but the best thought should be devoted to securing a practical and highly efficient plan, that a permanent organization may be finally effected.

The expenditure of money by committees of consolidated rural school districts, of county boards, or of State legislatures, or by departments of education, in traveling to inspect the best systems of schools and to consult those who have had more experience, is very often a most wise use of public funds.

The studies in the various agricultural subjects are so rapidly evolving that these suggested courses are being rapidly improved. Any school which is organizing courses in agriculture or home economics can secure literature and other assistance from State or National departments of education and from State agricultural colleges and from the United States Department of Agriculture. Not a few State colleges of agriculture support one or more teachers whose duty it is to cooperate with secondary and rural schools which desire to introduce courses in agriculture and home economics, and their work is in some cases showing most encouraging progress.

Those interested in organizing or improving courses of study in these subjects in consolidated rural schools or in secondary schools will find it worth while to secure the bulletins relating to agricultural education issued by the United States Commissioner of Education, by the United States Department of Agriculture, Washington, D. C., and by the respective State departments of education, State colleges of agriculture, and State experiment stations.

COUNTY SYSTEM OF CONSOLIDATED RURAL SCHOOLS, OR THE FARM SCHOOL.

Along many lines centralization is creeping steadily upon us, best in the form of cooperation, too often in the form of corporation. Happily, our public-school system is a great cooperative organization in which we all participate. Forces have arisen compelling us to enlarge the rural school unit to six or eight times its former size, changing from schools to which pupils walked, often in discomfort, to schools to which they, for the most part, ride in comfortable school wagons. (Figs. 2 and 3.) It is fortunate that the enlarged school, thus made possible, not only lends itself to cooperative organization, but leads our rural population into other lines of cooperative organization. It creates a large, compact, organized country life unit, recentering country life in a way to effect many needed developments along economic, social, and religious, as well as along educational lines. The consolidated rural school has no more important office than leading our farmers to delegate to cooperative organization those functions which the individual farmer can not well perform for himself. These larger school organizations will thus in many ways aid in preserving the individualistic land ownership to those who till the soil, and in developing the local creamery or other cooperative establishment for preparing farm products for market. (See figs. 9 and 10, pp. 28 and 29.)

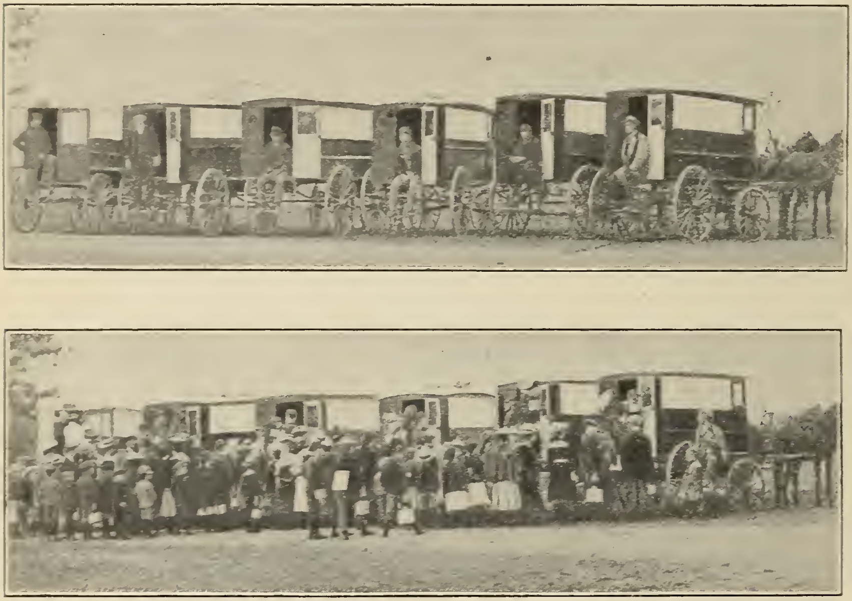


FIG. 2.—School wagons returning pupils from the farm school to their homes.

The times demand developments, enlargements, articulation, and unification in our country-life educational agencies for many reasons. Highly organized effort in the nonagricultural pursuits has swept past us with ever-increasing speed. We need to take stock of our educational facilities for that most important part of our population which produces, besides the food and clothing for us all, boys and girls for the farm, and a vitalizing surplus of people for our cities. We need, especially, to take an invoice of new educational inventions which may be useful in bringing up our education for country life to high standards.

Wonderful achievements seem easily possible, and no effort, no reasonable expenditure, is too great to harness up available school forces so as to develop highly for their life's work those who are to manage our farms and our farm homes. To no other class of our mothers can we provide such wonderful facilities for the production of strong people as to the mothers who live on the family farm—the farm owned and operated by the family. For no other large section of its citizenship can the Nation and the State provide a scheme of schools so well designed to give an all-round cultural and vocational education. The interests of country life are mainly wrapped up in an efficient system of rural schools. More than half of the vocational and most of the general educational problem for rural youth is to be in the coming consolidated school near the farm.

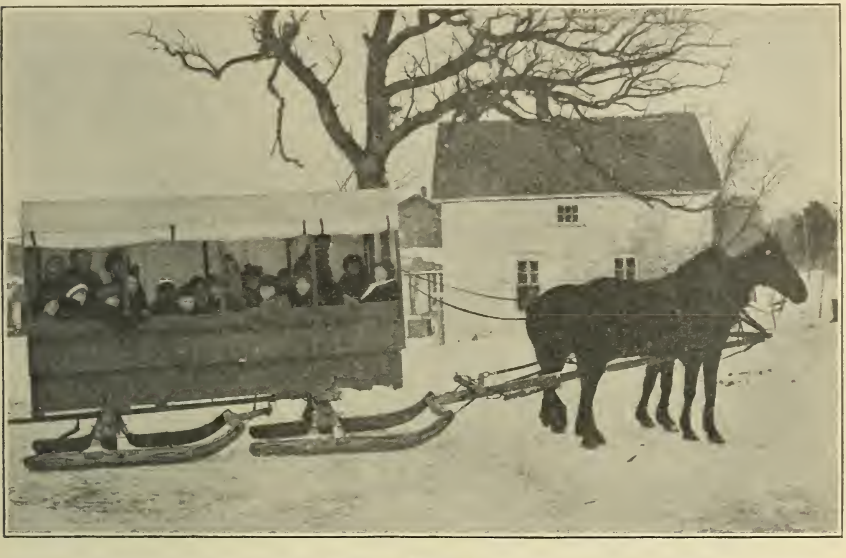


FIG. 3.—School wagon on runners taking Washington County, Minn., children to school.

In addition to the vocational instruction given the students in the ninth and tenth grades, or first two high-school years, the pupils in the grades will receive some instruction in agriculture and home making. From the years 10 to 17 such instruction can be given in manual training, in farm and home work, and even some in the classroom, in the practice laboratory, and on the school farm. This instruction for the most part will not take force away from the general studies. On the whole it will add to the sum of general schooling, in part because the interesting, realistic, and practical studies will hold the pupils longer in the school. If the value of this grade-school work could be properly estimated, the part performed by the consolidated rural school might rise to more than three-fourths of the whole school training of rural youth.

Since all the States combined do not now have more than 25,000 students in well organized collegiate and secondary agricultural courses; and since so many of our rural schools are so poorly equipped, restricted in time, and taught by teachers not well trained for their work, these schools as a whole are poorly performing the task which modern conditions properly place upon them.

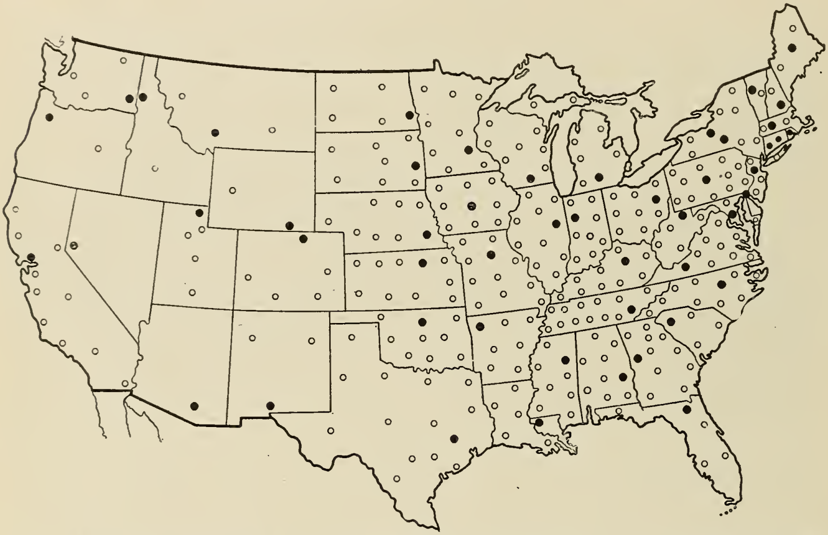


Fig. 4.—Map of United States, showing suggested plan of districting the States for large agricultural high schools. The black dots show the present location of the State agricultural colleges and their experiment stations. The small circles show suggested locations for proposed State agricultural high schools, with branch experiment stations.

Among America's most valuable citizens are mothers of healthy farm families; and what would these mothers ask better for their children than an efficient consolidated rural school into whose care they could daily deliver from the door to the school wagon their Young Americas? What greater boon would these strenuous women ask in their lives of loving achievement than to have developed, within driving distance from their homes, through State initiative and under county and State supervision, a school equipped to magnify rural business and the development of a noble country citizenship? Would our country mothers wait for a generation to be trained in the ways of these new schools before they would cooperate with the teachers in making the children's home and farm work truly apprenticeship and directly supplementary to the school work of class room, practice laboratory, and school farm? Surely not much of prophecy is required to imagine that the first point of view of the country mothers and fathers of a generation hence, having been trained in the consolidated rural school, will be to appreciate the opportunity to do the best possible by the farm boys and girls. These people will realize that the apparently heavy expense when these schools were organized was but an investment, like the first investment in the mother's sewing machine or the father's mowing machine, when those inventions became available.

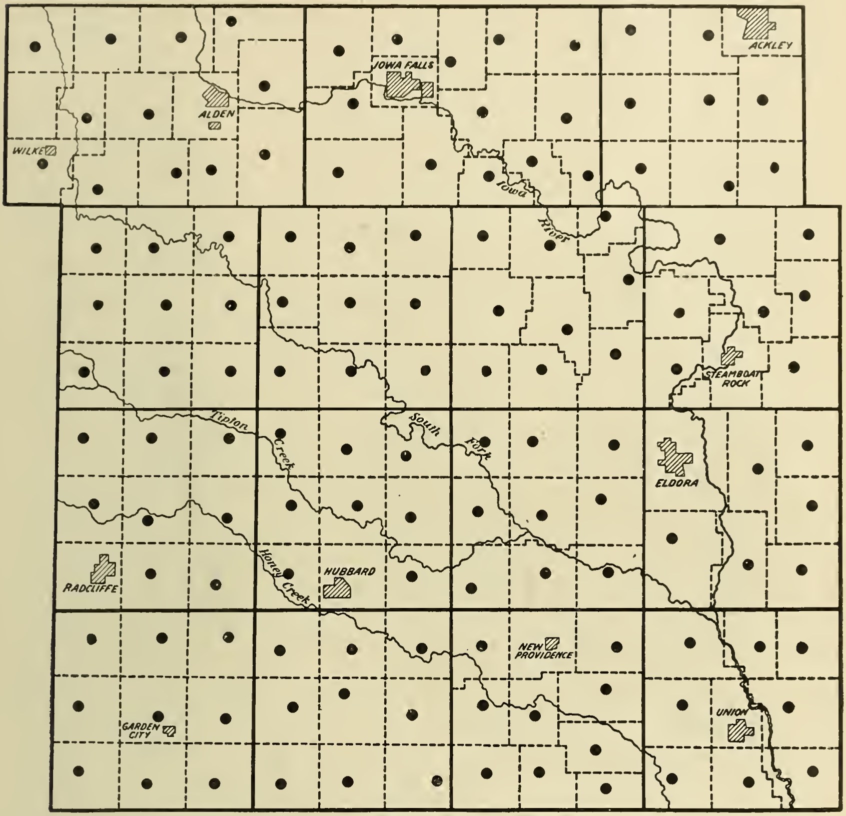


FIG. 5.—Map of Hardin County, Iowa, showing present plan of 133 isolated district schools and nine village and town school districts.

American agriculture and American country home making are no longer content with merely elementary schools, offering only the lower half of the sixteen years of public-school work, and that of indifferent quality. Our farmers are coming to see that the times require that they as well as the city people have high-school facilities for their children, and with it an avenue into collegiate schools, for those especially designed for technical professions. They are earnestly experimenting by sending children to academies, city high schools, and business schools, and by organizing county agricultural high schools, large State district agricultural high schools, and, most important of all, high-school work in their home schools, accommodating areas of a township or less. These local schools, within driving or public conveyance distance of all the homes, have the enormous advantage of allowing the parents to be in charge of their children during nights and vacation days, and of training them in a vocation and in habits of industry.

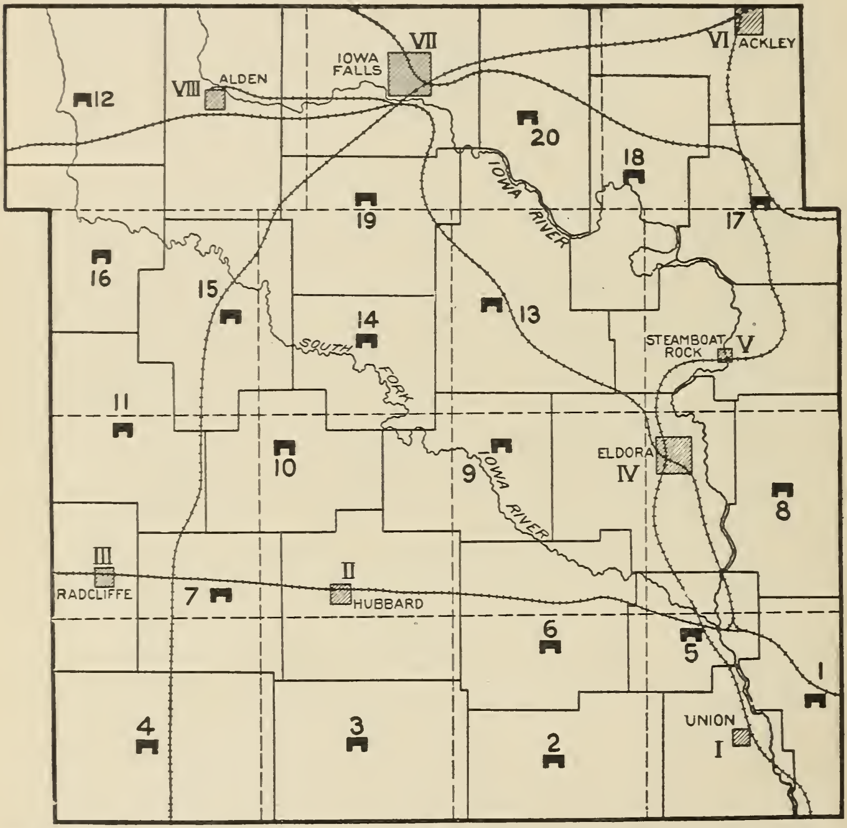


FIG. 6.—Map of Hardin County, Iowa, showing tentative plan for a county system of twenty consolidated rural schools in the open country and eight schools in town.

These consolidated schools have taken several forms. In some cases, only the older pupils are taken to a central township school, the little rural district schools being retained for the smaller children, and the older pupils supplying their own conveyance to the central school. In other cases only a few one-room schools are consolidated, teams being employed at public expense to haul the children from abandoned school districts to a school with one or more rooms. And in yet other cases—six hundred or more in America—the schools are abandoned in entire townships, or, better, a more naturally chosen area of 20 to 40 square miles in area, regardless of government township lines, and all pupils ride at public expense to a consolidated school. Here the eight grades are accommodated in three rooms and two or more high-school grades are cared for in one or two additional rooms. In most of these schools the curriculum is as yet borrowed from city schools and naturally leads toward the nonagricultural vocations and away from the farm home. The extra effort and expense have heretofore generally been centered on the upper years of a general high school course, that this educational ladder might easily lead the pupils to colleges, usually nonagricultural in character.

In some notable cases, however, these schools have risen to their opportunity to serve the community with part of the high-school course centered on two years of class room, laboratory, school farm, and home apprenticeship work related to farming and farm home making, instead of distributing the entire energy through four years of general high-school studies. From the area of 20 to 40 square miles the 100 to 200 farm homes send by public wagon to the consolidated rural school 100 to 200 children. This institution, into which the consolidated school must eventually grow, has a 10-acre farm so divided as to give half to combined campus and farmstead and half to field plats for instructional purposes. (Figs. 9 and 10.)

On the one half are the schoolhouse with four schoolrooms and a laboratory room, the latter alternately used for classes in science, agriculture, and home economics. (See figs. 11, 12, and 13, pp. 30 and 31.) Library rooms, storerooms for equipment, also outdoor sheds and shops are all developed from year to year. On the campus there is a cottage for the principal's family, and small buildings are provided for the family cow, hens, and pigs, and for the school horse, vehicles, and implements. The campus has ample playgrounds beautifully set to lawn grasses and about them are planted timber belts, orchards, and gardens containing labeled varieties of forest trees, fruit trees, fruit and ornamental shrubs, and vegetables and flowers. A knowledge of the habits, needs, and values of all these beneficent plants may be absorbed as the joyous school years keep teacher and pupil in touch with them, the one to teach, the other to learn.

The other half, the "school field," has plats in size from half an acre down to those a few feet across for work with the ordinary field crops. As with the campus plantings, half the truth has never been told as to what can be done, what lessons can be taught, what skill can be gained, what inspirations can be given in these small fields. No other school book is in the same class with this outdoor nature book, supplied at public expense and cared for by the loving touch of the teacher and the willing hands of his pupils. Every day is a leaf with progressive natural history and economic facts calculated to have an expansive effect on the mind as well as designed to give the eye new training to see better the facts and the philosophies in the unfolding page of the next day, the next year. This book reveals true lessons of all nature and industry of the countryside, and helps make of the farm community an ever active social and industrial organization to know of the forms and forces which give them much of their pleasure and all of their substance.

Figures 9 and 10 show suggestive general plans for a 10-acre farm in connection with a consolidated rural school. The possibilities of giving practical and scientific instruction in such farm schools, among farms and with the pupils helping on the home farms, as here illustrated, are very large. That the best farms of the neighborhood can be here reproduced in miniature on the school field has been demonstrated, and with data brought by the students from the real farming at home many most valuable lessons can thus be effectively taught. This miniature farm laboratory will be in touch, through the older students, with the great laboratory of a hundred and fifty practical farms surrounding. The entire district is a vocational school in which the pupils all secure apprenticeship training in managing farms and homes.

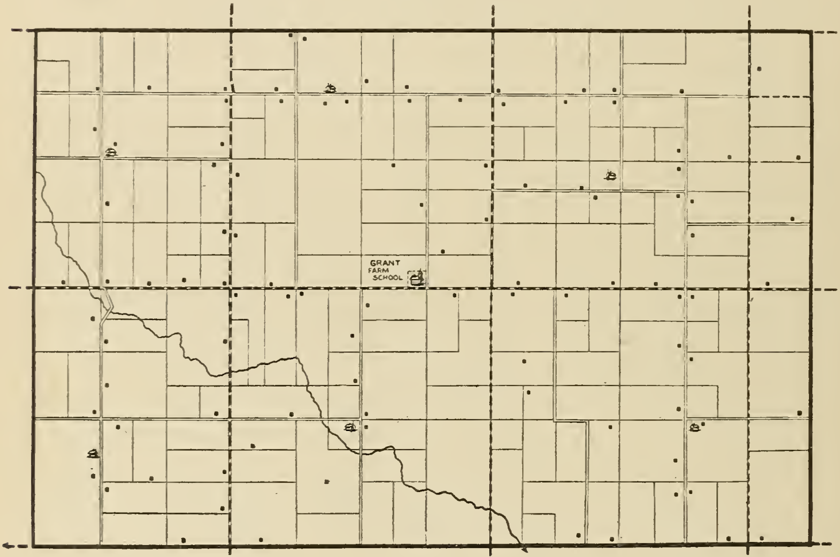


FIG. 7.—Map showing present details of proposed district 3 in figure 6. The location for the consolidated school in the center is shown; also the six schools which would be abandoned; also the roads, the outlines of the farms and dots showing the location of the farm homes.

Here can the mind of the American farmer evolve a better farm system from the wasteful philosophies and practices of our times. Here, under the direction and guidance of our rising school of economic teachers, can be demonstrated the philosophy of reorganizing American farms in accordance with scientific engineering principles. That the 20 per cent of loss now occurring from a lack of knowledge of crop rotation and live-stock, fertilizer, and crop coordination can be saved, will here be demonstrated to all farm youth, and to their parents as well. Here the mighty movement now being successfully started so to improve the heredity of our plants and animals as to add $500,000,000 annually in increased production to the $7,500,000,000 worth we now produce will gain the hearts of the young people of the farms and through them the hearts of their parents, that all may cooperate in this undertaking.

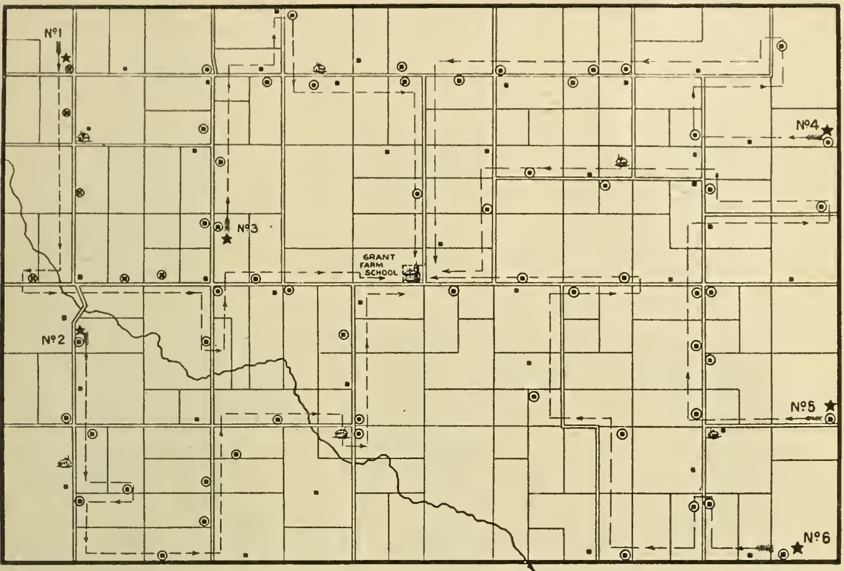


FIG. 8.—Map of the proposed district (No. 3 in figure 6) after consolidation, showing, by means of circles about the dots, those farm homes which have school children for the particular year, and by means of arrows, the six school-wagon routes over which the children are transported to the farm school. The stars show points from which the wagons start each morning.

In the home economics laboratory of this school can rise a technique, a dexterity, an inspiration, in part new, but in part taking the choicest knowledge common to our best country mothers and giving it to all future country mothers. The family farm, in which the owners have centered a lifetime interest, and in which they are developing accumulative history of generations of the family, will gain its proper status through this consolidated rural school. This mighty racial institution, the family farm, is calculated to stand when calamity has overtaken many of our more dependent and less stable institutions, and it is worthy of far more national attention than is given it.

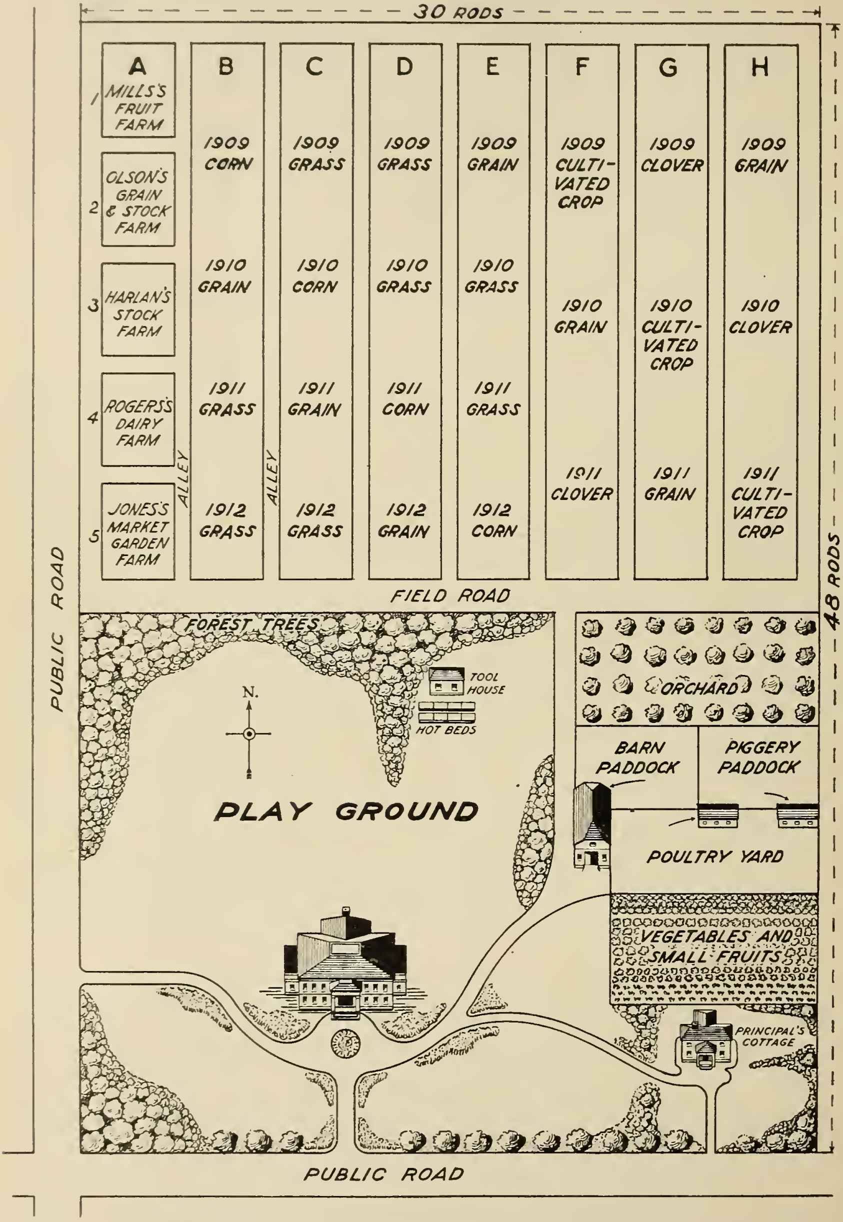


FIG. 9.—Consolidated rural or "farm school" on 10 acres in the open country or beside the village.

The longer course of study, the stronger general and social status, the wider outlook through literature, the firmer grasp on the indus-

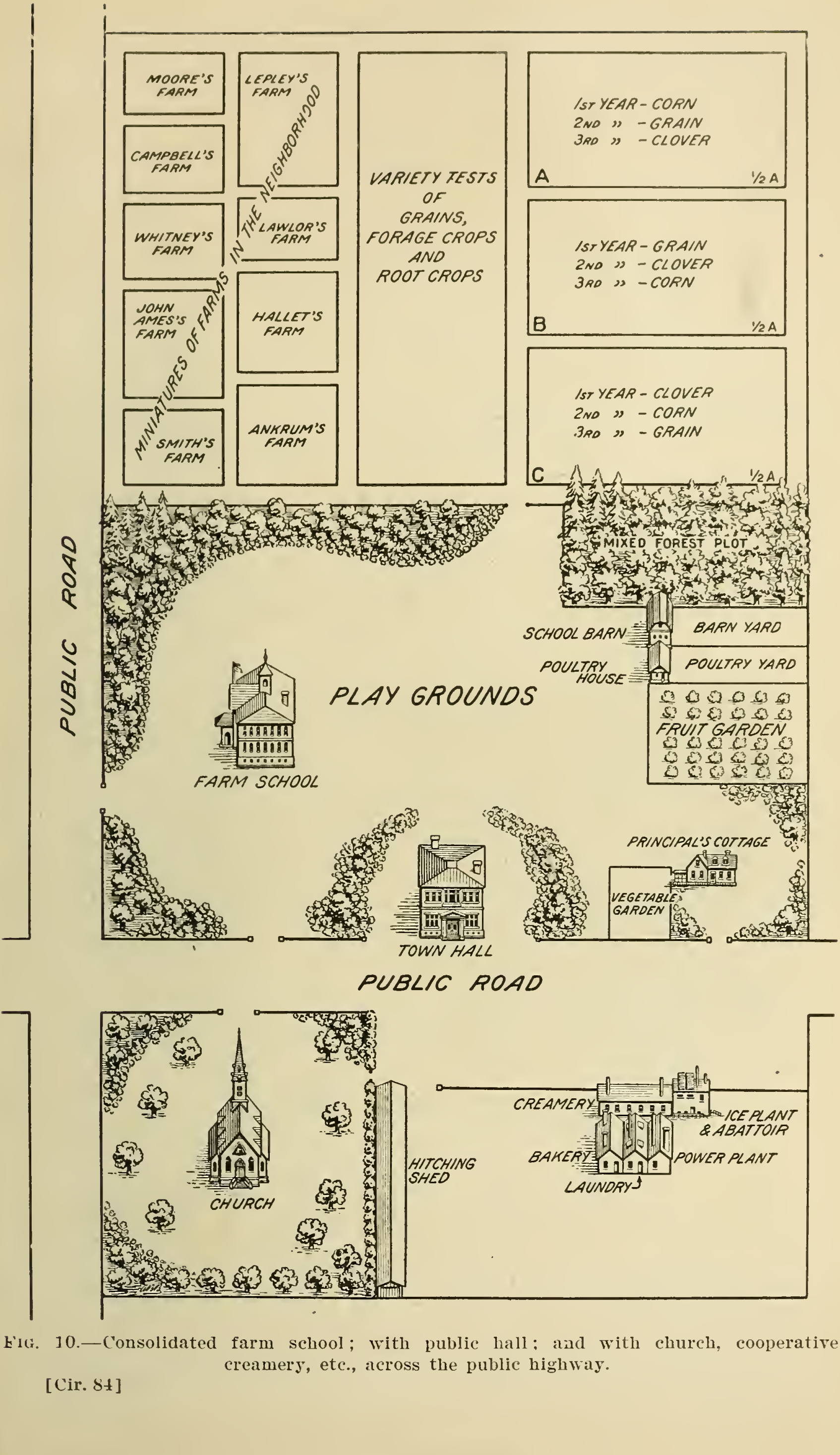


FIG. 10.—Consolidated farm school; with public hall; and with church, cooperative creamery, etc., across the public highway.

trial side of home making, the better appreciation of the possibilities of farm-home making and of country motherhood under the new development in the country, will all lead to a grander race of country mothers and fathers. Where there is now a lack of organization of the educational forces of the rural community we shall see more effective organization. The solution of difficulties which constantly arise in the life of the farm youth will be much more useful than ever in building character. More onlookers, more community interest, more helpful hands near by, more of organization to overcome ob-

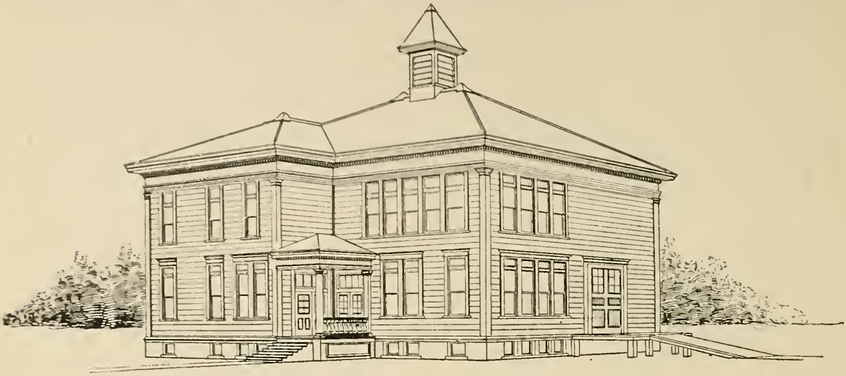


FIG. 11.—Design for consolidated farm school building. (Drawing by G. H. Parks.)

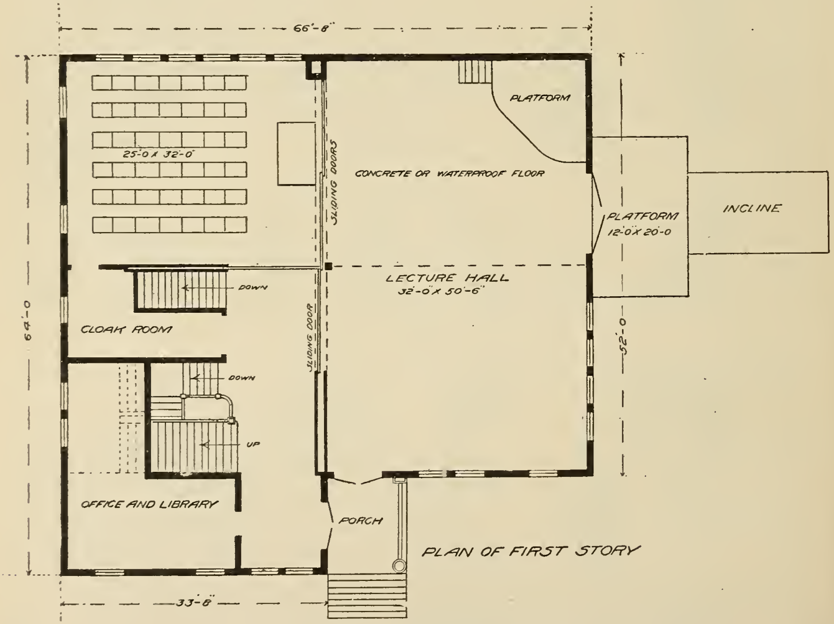
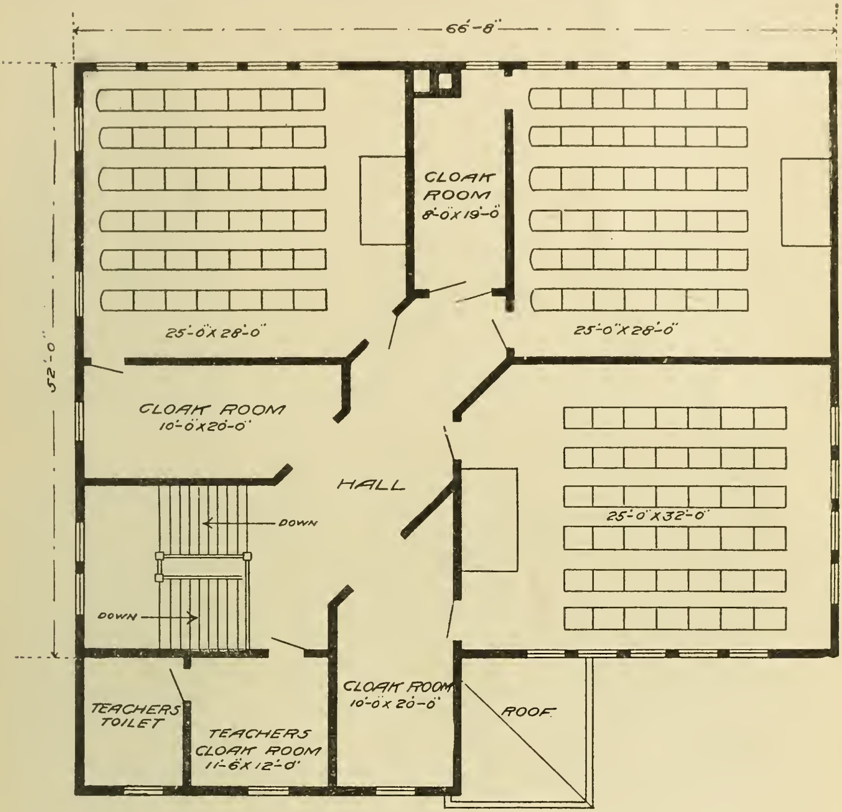


FIG. 12.—Lower floor plan of farm school building with class room for classes in first and second year high-school course; lecture room and practice laboratory combined; and library and office for the principal.

stacles, more of touch with the facts and experiences as recorded in the printed page will combine as never before in character building. With more of the dynamic force of suggestion and encouragement from teachers and parents, the country youth will have vastly more to make him or her grow into the full stature of manhood and womanhood which life in the country can produce.

America's paramount interest in instruction in agriculture and country-home making centers in the two lower high-school years which it is possible to develop in the consolidated rural school. But this two years of combined general and technical instruction by a principal trained to instruct in agriculture and an assistant trained to teach in home economics will supply a vital overflow into the grades below. And its potent apprenticeship adjunct, under coordinated school and parental instruction on the farm and in the home, in its breadth and in its effectiveness in combining the production of character with the ability to do work, in large part affects the



PLAN OF 2ND STORY

FIG. 13.—Upper floor plan of farm school building with three school rooms for the first year to the eighth year classes in the elementary course.

younger pupils as well as those actually in the technical class work of the high-school classes.

The plan of work which seems to be mapping out for the two high-school years in the consolidated rural school is centering on the plan of six months in school and six months on the home farm. During the six months of attendance at the school these older pupils ride with the younger children in the public school wagon, necessitating more teams than in autumn and spring, when only the primary pupils are in school. During these six months of full school work the studies of these older pupils, as shown in the outline (pp. 15 and 16), are divided between general studies, scientific subjects, and the practical studies of farming and home making. The boys and girls have most studies together, having separate classes and laboratory work only for things distinctively of the farm on the one hand or of the home on the other. A limited amount of practical work connected directly with the technical studies is assigned to be done at home, mornings, evenings, and Saturdays, often under cooperative arrangements between teacher and parents. During the alternate six months these older pupils can work at home five days in the week and spend one day in school with the younger pupils. When there is especial need of their services at home, some of the older pupils yet in the grades may also remain out of school during all the six months of the cropping season.

This weekly school day for these older pupils is not designed entirely for work, but in part as a respite from the burdens of daily responsibility at home, and in part for educational purposes. These youths, favored as they are with much outdoor life, naturally look forward with pleasure to this day of school wagon rides, games, social contact and uplift, light work to keep up the garden and field work of the school farm, and weekly reports of apprenticeship work and of achievements at home. They will come fully to appreciate how this gala day gives impulse, growth, and especially the power to work with folks as well as with things.

The coordination of school instruction and apprenticeship instruction on the farm, in the home, and in the shop is a new educational field of the widest possibilities. The rich virgin pedagogical field in rural apprenticeship work will yield many splendid lines in which the teacher and the parents in cooperation can forward the pupil's interest, knowledge, skill, and practical business judgment. Boys on different farms can contest, as in the fattening of bunches of pigs, in securing good growth in pail-fed calves, in raising an acre of corn, in setting straight rows of fence posts, in plowing fields, in laying tile drains, in breeding corn, in growing the family strawberry patch, in producing prize melons. Girls likewise can compete, under the supervision of the teacher of home economics, in the planning of the farmyard, in the decoration of one or more rooms in the home, in the planting of ornamental plants, in the growing of a winter window garden, in the evening entertainment of a students' club, in the development of a home method of table service, in the making of dishes, as the baking of bread, cakes, and pies, in the preservation and canning of vegetables and fruits, in the making of sausages, or in the making of graduation dresses. The number and kinds of farm and home work that the teachers of agriculture and the teachers of home economics in 30,000 consolidated rural schools could thus bring into school use would rapidly grow, and from the many tried those best lending themselves to wide use could be selected for publication in apprenticeship manuals and thus made available to all.

The change from the district school system to the consolidated is accomplished by systematically redistricting the entire county, disregarding the old school district boundaries. In the plan for Hardin County (figs. 5, 6, 7, and 8, pp. 23, 24, 26, and 27) 142 district schools are merged into 20 consolidated schools in the open country and 8 village and town schools with which surrounding school districts are consolidated, thus providing a complete system of rural and village schools to accommodate all pupils of the entire county.

AGRICULTURAL HIGH SCHOOL.

Experience in Minnesota, Nebraska, Wisconsin, and several other States has shown that the agricultural high school can aid in curing the weakest spot in our public-school system, the vocational preparation of those who are to manage our farms and farm homes. It is not asserted that these schools can do the bulk of the teaching. This they must share with the consolidated rural and village schools, and with the isolated district school and the city high school; and to the two first named they must leave the larger part of the actual work. But the agricultural high school can do the best work in educating the teachers and leaders along technical lines and they can establish high standards for all the schools named. If the suggestion were carried out of establishing 9 agricultural high schools in Minnesota, or 1 in each 10 agricultural counties, these schools could train a large part of the teachers of agriculture and home economics needed for the 1,800 or more consolidated rural and village schools which would replace the existing district schools.

Our 5 State normal schools could be equipped to provide part of these teachers. But the best teachers will be those who, having graduated in the agricultural high school, pursue a teacher's course in a State normal school or in the State agricultural college. These 9 agricultural high schools would accommodate 4,500 students annually. If one-sixth of these became teachers and taught an average of six years, the necessary 3,600 technical teachers needed to place an agricultural teacher and an instructor in home economics in each of 1,800 local schools would be provided. The additional one or more years of preparation required by these teachers in a normal school, or in a normal course in a State or nonpublic college, would be secured in many cases, because the better salary, the increased security in the tenure of office, and the greater satisfaction in the work would warrant the further time and the expense.

The scheme of rural and village schools outlined on previous pages, with two efficient high-school years leading to the last two high-school years in the large, well-equipped State district agricultural high school, would furnish superb students for State and other normal schools and for colleges. With students thus trained and thus inspired as to the possibilities of country-life education, the normal schools could really accomplish that of which they only dream—complete the training of teachers qualified to bring out the possibilities of the youth in our country schools.

With such a body of students from country-life school courses, and a similar body trained in city schools developed similarly in city industries, in city home making, and in general subjects, our normal schools could forego much of the secondary school subjects they must now provide and devote themselves more specifically to developing their students in the vocational work of teaching. Many normal schools in the United States which are now too much open to the accusation of being mainly local high schools could be in fact, as in name, State normal schools. Normal-school pupils coming from consolidated rural schools and from vocational high schools taught by graduates of teachers' courses would be ready for more advanced work in methods of teaching than are most of the pupils at present. The consolidation of rural schools will demand one man teacher and usually three women for each school. The normal schools will no doubt remain largely female schools, and the elementary grades in the city schools will no doubt continue to be taught mainly by women, while men will teach the mechanical industries. The large secondary agricultural school, the large secondary mechanic arts school, and the State colleges will be able to prepare most of the teachers for men's industries.

Our best normal-school men are urging that the secondary schools be developed to give more of the basic instruction, and too often they are striving against odds in their efforts to secure students who have been well grounded in the subjects the lower schools should teach. Pedagogical science, demonstration teaching, practice in the actual work of teaching normal training classes, and apprentice teaching before final diplomas are granted should have wider scope in our normal schools. In case of students from schools devoted in part to vocational studies the normal school will need to supplement the general school subjects.

THE BOY IN THE AGRICULTURAL HIGH SCHOOL.

The large State district agricultural high school, as at St. Anthony Park and Crookston, with its strong corps of technical and general teachers, with its large farm, its finely equipped buildings for dormitories, class rooms, laboratories, practice shops, dairies, and judging rooms, and with its relation to the apprenticeship work on the farm and in the farm home, is a place of intense education. The boy is encompassed by a broader educational environment than in the school where there is little besides books. There is everywhere touch with the home affairs. The new ideas correlate at a thousand points with what the pupil has experienced. Not so much is so entirely new as to make him feel like a foreigner in a new land, but things of which he already knows something are confronting him on every side.

His grasp of the intricacies of the soil is broadened. He sees with his own eyes the protoplasm of the plant as shown by the microscope. He sees analyzed out in their parts the carcasses of the profitable and the unprofitable meat animals. His eyes are sharpened to see the desirable conformation of the horse's foot and limb. He sees the applications of the laws of physics to the three-horse evener on the plow. He clearly learns how water percolates downward and seeps sidewise into the tile drain. He appreciates the use of the soil mulch in dry weather. He finds the limits of physical, chemical, and biological knowledge of that most complex laboratory, the soil, and comes to appreciate the need of vaster and deeper research in departments of agriculture and experiment stations, into the realms of the unknown in agriculture. He learns niceties in the use of saw, plane, hammer, anvil, and T-square which his father has not had opportunity to know so well. He cross pollinates flowers and gets into real touch with that growing subject, the creative breeding of plants and animals. He more clearly sees why one form of ear and kernel adds to the yield of corn. He has a more practical appreciation of the blood of the strain of animals and of plants which projects into its progeny larger net values per herd or per acre. He gains fuller respect for the agronomist, the horticulturist, the animal husbandman, the dairy expert, the chemist, the physicist, and the entomologist. His inspiration is greatly increased to be one of the leading farmers of his county, constantly nursed by like expressed ambitions of fellow-students. He gains not a little experience with pen and in public speech, which will help him carry into the public affairs of his county or State that weight which comes from success in his business. The student is not unlucky if he gains a desire to return to teach and be a leader in the consolidated rural school, to help build up the farming and the country life of an entire neighborhood.

THE GIRL IN THE AGRICULTURAL HIGH SCHOOL.

The farm girl, too, shares in nearly all the facilities and experiences of the boys, and has, in addition, her own special facilities, opportunities, and experiences. The study of food takes on a new meaning. She learns how to avoid poorly balanced food rations. She becomes a trained judge of the relative values of food. To the knowledge gained from her mother and from her teacher in the farm school she adds facts and skill in the cooking of cereals, meats, and vegetables. Her skill in choice of fabrics and colors in clothing is increased, she gains artistic skill in decorating the home and new ideas concerning social relations, the care of the sick, and the development of children. Her inspiration to be the mother queen of a truly splendid home is broadened and deepened. She greatly widens her acquaintance with people as well as with the accumulation of knowledge in literature. Here she grows in social grace, in personal virtue, in power to be a helpmeet in splendidly building up a family farm and a farm family.

The agricultural high school has proven adapted as well to the country girl as to the country boy. In case she takes up at least temporary service as a teacher in the consolidated rural school, there to serve the community in training many girls for their life work, she will minister in a most useful work, and will receive commensurate rewards in wages and in the appreciation alike of her pupils and their parents.

THE NEED FOR THE WELL-EQUIPPED AGRICULTURAL HIGH SCHOOL.

The agricultural high school is a missing link to complete our educational facilities for country life. None need fear it will cause a stratification of society. It will put farming and farm home making on a parallel with other vocations in which the workers are trained for their work. Rather should we fear that farmers, as in many other countries, if left uneducated, or educated in schools with ideals mainly for the nonagricultural, will be in a peasant-like stratum, weighed down under a load of ignorance. Those who fear vocational education need only to observe its effects on our lawyers, physicians, engineers, and scientific investigators, or on the graduates of agricultural high schools or mechanic arts high schools, to see its benefits. Vocational schools are winning their way wherever fairly tried, whether for the professions or for the plainest trade requiring peculiar knowledge and technical skill. The general public schools of the open country, of the village, and of the city can provide the beginning subjects and the simpler practice work of vocational courses. But they must be supplemented by finishing courses in schools of sufficiently large unit to provide experts in the practical subjects each supplied with the appliances of the vocation in which practice as well as theory is given. Modern conditions demand that society shall train its members in anticipation of the modern division of labor and that each shall prepare to do well one chosen part as well as be broadly cultured.

Since the strength of the country is made up of the sum of its units, it is proper paternalism for the State to assure to each of its youth a training to be effective in self-support and in contributing to the whole of society both of material wealth and of individual influence for the social uplift. It is not improper paternalism to offer school facilities to all youth until they attain the age of citizenship and to provide vocational facilities for all.

Without the large agricultural high school, the educational scheme for those who are to manage the family farm and farm home is incomplete. The academy, the city high school, the normal school, and the preparatory course in the denominational college and in the agricultural college are useful accessories and each can do an important part, but the system is not complete without the agricultural high school. It articulates not only with the rural and village schools below and the agricultural college above, and with all other schools, but with the family farm and the farm home. Even were its public cost per student much greater than now, the expenditure would be returned in making possible the consolidated rural school, in providing successful farmers and farm home makers to demonstrate the best to each neighborhood, and in providing splendid students for our agricultural colleges.

ELEVEN AGRICULTURAL HIGH SCHOOLS IN GEORGIA.

The movement in Georgia for an agricultural high school in each Congressional district gave suggestion for Federal and State cooperation in extending vocational industrial education down from our collegiate to secondary schools, and it also devised a method for organizing these and installing them in the hearts of the people. It provided a State board composed of the governor and local men to establish a school and branch station in each district. The board took into consideration the desirability of the location offered and the sum of money subscribed toward fitting out the school with farm, buildings, and other equipment, and chose those locations which on the whole seemed most desirable. That the citizens of Georgia could thus raise by private subscription for eleven agricultural high schools the magnificent sum of $800,000, or over $70,000 per school, for school equipment, gave proof to the entire country that the farmers and other citizens have come to believe in agricultural research and education and are ready and willing to pay the cost. Thus the State was relieved of part of the initial cost; the county and city securing the school were brought into cooperation in establishing the institution; and the value of the school to the young people of the competing counties was thoroughly made known. The local community having invested their own money were made loyal and watchful to prevent others from wrongly managing the funds or securing unfair profits from the institution.

LARGE AGRICULTURAL HIGH-SCHOOL UNITS NECESSARY.

Without the highly developed agricultural high schools to prepare teachers, set high standards, and bring together farm youth from the different counties, the agricultural side of education in the country and village schools can not be so strongly developed. With vocational teachers in every neighborhood in touch with every farm and farm home, the consolidated rural school will have a much more profound influence on country life than would the county agricultural high school. The aggregate beneficent influence of 9 ten-county secondary agricultural schools and 1,800 consolidated rural schools would no doubt be three times as great in vocational training as the aggregate influence of 84 one-county agricultural high schools and 11,000 one-room district schools, while the cost would be no greater than the well-developed county agricultural high schools and one-room district schools organized as well as are the best now to be found in any of the States.

The chief argument for the highly organized agricultural high school supported by ten cooperating counties, as against the moderately well-equipped county agricultural high schools, is that the larger school will better prepare those who are to become teachers and those who as local leaders will set the standards for the county system of 20 consolidated rural and village schools proposed for each county.

FINANCING CONSOLIDATED RURAL SCHOOLS IN MINNESOTA.

The State of Minnesota is in a position to lead in the financing of technical education in her consolidated rural schools. It may be assumed that twenty years hence under the old plan of districting the rural communities this State would have 11,000 district schools, which under the new county system of consolidated rural schools would become 1,500 consolidated farm schools and 2,000 remaining isolated district schools.

The State auditor estimates that the permanently invested school fund, arising from the sale of forest products and of iron sold from the State school lands, will increase during the next fifty years from its present sum of nearly $20,000,000 to at least $100,000,000; and that the permanent fund of the University of Minnesota will have risen from its present sum of $1,500,000 to at least $20,000,000. Some believe the State school fund will reach $100,000,000 in a much shorter period, and will eventually approximate $200,000,000. At 4 per cent an endowment of $100,000,000 will yield $4,000,000 annually; and $20,000,000 will yield for the university $800,000.

A thousand dollars or even $500 given annually from the future State school fund to each consolidated rural, village, and town school district for studies in technical subjects would not only help pay the additional cost of introducing agriculture and home economics but if given to the rural communities for that purpose would induce them to change throughout from the rural district school plan to the county system of consolidated farm schools.

This sum of money offered by the State for that specific purpose would at once bring into general favor the existing county option law, passed several years ago, providing that any county may choose a commission to make a redistricting plan under which to eventually consolidate the schools of the entire county, and put the new plan to the vote of the people. The large permanent investment in consolidated rural school buildings makes it the part of wisdom that the districting should be done with care and intelligence and by disinterested minds. Minnesota has already recognized this fact in the passage of a law providing a means of adopting a plan of districts for an entire county system of consolidated rural schools in each county.

The following gives a brief abstract of Minnesota's local option law for adopting county systems of consolidated rural schools, and for consolidating in each designated district:

(1) That a county rural school consolidation commission shall be appointed by the board of county commissioners upon its own initiative or upon petition of one-fourth of the farm owners who live on their farms. (2) Of the seven members the county superintendent of schools shall be one, four shall be members of the board of county commissioners, and the county auditor and the State superintendent of schools shall each appoint one. (3) This commission shall publish a map showing a proposed plan of districting the county into districts of 16 to 36 square miles each. (4) The adoption of this plan shall be submitted to the voters at a special election. (5) A suggested amendment to the law provides that after the county has adopted the plan each district can by vote choose when it shall carry out consolidation.

Preparing plans for districting the county for consolidated rural schools, and for transporting pupils to consolidated rural and village schools and to city schools, has not proven especially difficult.[a]

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[a] Under the author's direction Mr. Geo. W. Knorr is making redistricting plans suggesting how Douglas County and Olmstead County, Minn., schools could be consolidated.

The State of Minnesota is fortunate in that it has in prospect money with which thus to aid the rural schools both in their better equipment and in inducing the voters to investigate as to the greater value of the consolidated rural school. If the plan of consolidated rural schools and large agricultural high schools were in operation, it may be assumed that Minnesota would have in educational courses related to country life 200,000 pupils in the elementary grades of consolidated rural schools; 30,000 in high-school work in these schools; 5,000 students in agricultural high schools and in agricultural teachers' courses in State normal schools; and 1,000 students in courses of collegiate grade in the agricultural college and State normal schools.

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